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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/725,825

12/01/2003

Neal E. Ulen

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11/22/2005

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER

HOFFBERG, ROBERT JOSEPH

ART UNIT

PAPER NUMBER

2835

DATE MAILED: 11/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/725,825

Applicant(s)

ULEN ET AL.

Examiner

Robert J. Hoffberg

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/1/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/16/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Detailed Action

Specification

1. The disclosure is objected to because of the following informalities:
Abstract uses "support base" to refer to #20 and #30. Para. 0013 uses both "panel screw" and "screw" for #50. Para. 0013 uses both "standoff press" and "standoff" for #40. Para. 0014 uses both "tension spring" and "spring" for #55. Para. 0014 uses both "heat sink base" and "base" for #30. Paras. 0015 and 0017 uses both "counterbore" and "counter-bore" for #65. Both "system" (Para 0013) and "system chassis" (Para 0016) are used for #75.

Appropriate correction is required.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the a top and a bottom of the base of the heat sink, a top and a bottom of the bore, a bottom of the base of the thermal transfer device, a bottom threaded portion of the screw, a top of the heat sink base and a counterbore which grasps the spring must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
3. The drawings are objected to because the labels for the features on Figure 3 are inconsistent with feature names in the specification: On Figure 3, "electronic device 10" is "Heat Sink", "integrated circuit 15" is "Socket and CPU", "support base 20" is "circuit board" and "system 75" is "Chassis".

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4. The drawings are objected to because Figure 2, #70 is pointing to a threaded end of the screw which is opposite a "screw head" which is terminology different from that which is generally accepted in the art to which this invention pertains. The drawings are objected to under 37 CFR 1.83(a).
5. The drawings are objected to because Figure 2, #60 is pointing to an external thread on the standoff press whereas Para 0013, line 5 describes an internal thread that the panel screw needs to be rotated in.
6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "70" has been used to designate both screw head (Para. 0013, line 13) and screw (Para. 0016, lines 3-4).
7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "65" has been used to designate both the counterbore that enables the threaded portion of the screw to hide (Para. 0015, lines 1-2) and the counterbore that the compressed spring to hide (Para. 0017, line 4).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the

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brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

8. Claims 1, 2, 5, 6, 10, 12, 13-16 and 18-21 are objected to because of the following informalities: Claim 1 and 10: "in base" needs an article, should be "in a base". Claims 1, 5, 6, 10, 15, 16 and 19: "bore" is called a "hole 45" in the specification. Claims 1, 7 and 10: "a integrated" should be "an integrated". Claims 2, 12, 13 and 19: "spring" needs an article, should be "the spring". Claim 5: "thermal transfer device base" should be "the base of the thermal transfer device". Claims 12, 18, 19, 20 and 21: "standoff" should be "standoff press". Claim 14: "heat sink" needs an article, should be "the heat sink". Claim 15 and 16: "heat sink base" should be "base of the heat sink".

9. Claims 5, 9, 11, 16-19 and 21 are objected to because they lack antecedent basis.

Claim 5 recites the limitation "the bottom of the thermal transfer device base". Claims 9, 11, 18 and 21 recites the limitation "the bottom threaded portion". Claims 11 and 16 recites the limitation "the top of the heat sink base". Claim 15 recites the limitation "the bottom of the heat sink base". Claim 17 recites the

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limitation "the counter-bore". Claim 19 recites the limitation "the bottom of a bore" and recites the limitation "the top of a bore". There is insufficient antecedent basis for these limitations in the claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 4, 11 and 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claiming the subject matter which applicant regards as the invention.

With respect to Claim 4, the specification describes the standoff press as fitted to a hole, whereas the threaded embodiment is not taught in the specification.

With respect to Claim 11, the claim language is structurally inaccurate in that a bottom threaded portion of the screw engages a top of the support base #20 (see Fig. 3) or system #75 (Para 13, lines 11-12) not the heat sink base #30.

With respect to Claim 19, the claim language is structurally inaccurate in that the device #10 (Para 0010, lines 3-6) is defined by applicant as an entire assembly including a main circuit board, integrated circuits, heat sinks, fan, and other components mounted to the main circuit board not a detail.

With respect to Claims 19-20, the claim language is structurally inaccurate in that a standoff press is in a bore #45 in a base #30 of a heat sink not a support base #20 (defined by applicant as a circuit board).

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Alden, III (US 6,786,691).

With respect to Claim 1, Alden, III teaches an integrated thermal dissipation device, comprising: a thermal transfer device (Fig. 2, #11); a standoff press (Fig. 1, #25) disposed through a bore (Fig. 2, #16) in base (Fig. 2, base of #11 and #16, Col. 3, lines 13-16) of the thermal transfer device; a screw (Fig. 1, #15) disposed through the bore in the base of the thermal device; a spring (Fig. 1, #20) adapted to bias the screw against the thermal transfer device.

With respect to Claim 2, Alden, III further teaches wherein the screw and spring bias through (see Fig. 1) to the standoff press.

With respect to Claim 3, Alden, III further teaches wherein the standoff press is press fit (see Fig. 1) to the base of the thermal transfer device.

With respect to Claim 4 (as best understood), Alden, III further teaches wherein the standoff press is threaded (Col. 5, lines 65-67) to the base of the thermal transfer device.

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With respect to Claim 5, Alden, III further teaches wherein the standoff press is fitted to the bore from the bottom (see Fig. 1) of the thermal transfer device base.

With respect to Claim 6, Alden, III further teaches wherein the screw is inserted to the bore from the top (see Fig. 1) of the thermal transfer device base.

With respect to Claim 7 (as best understood), Alden, III further teaches further comprising a counter-bore, wherein the counter-bore (Fig. 5, #380) grasps the spring when the thermal transfer device is attached to a integrated circuit (Fig. 2, #9) for reliable thermal performance.

With respect to Claim 8, Alden, III further teaches wherein the spring is a tension (see Fig. 1 and Col. 6, lines 57-59) spring and wherein the spring is disposed around (see Fig. 1) the screw.

With respect to Claim 9, Alden, III further teaches wherein the bottom threaded portion (see Fig. 1) of the screw is adapted inside the standoff.

14. Claim 10,11, 13 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Goodwin (US 6,545,879).

With respect to Claim 10, Goodwin teaches an electronic system, comprising: a circuit board (Fig. 1, #30); a integrated circuit (Fig. 1, #10) disposed on the circuit board; and a heat sink (Fig. 1, #40) positioned in thermal contact (Col. 1, lines 31-35) with the integrated circuit; and a integrated connection apparatus adapted to maintain the heat sink in contact with the integrated circuit, the integrated connection apparatus comprising: a standoff press (Fig. 1, #66) disposed through a bore (Fig. 2, #42) in base (see Fig. 2) of

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the heat sink; a screw (Fig. 1, #44) disposed through the bore in the base of the heat sink; and a spring (Fig. 1, #46) adapted to bias the screw against the heat sink.

With respect to Claim 11 (as best understood), Goodwin further teaches wherein the screw engages the integrated circuit when the bottom threaded portion (bottom of Fig. 1, #44) of the screw engages the top of the heat sink base (Fig. 1, #80) (Examiner is interpreting as a support base).

With respect to Claim 13, Goodwin further teaches wherein the screw and spring bias through (see Fig. 1) to the standoff press.

With respect to Claim 19 (as best understood), Goodwin teaches an apparatus comprising: a standoff press (Fig. 1, #66) disposed through the bottom (see Fig. 1) of a bore (Fig. 1, #44) in a support base (Fig. 1, #80); a screw (Fig. 1, #44) disposed through the top (see Fig. 1) of the bore in the support base; and a spring (Fig. 1, #46) adapted to bias (see Fig. 4) the screw against a device (Fig. 1, #40) to be retained, wherein the screw and spring engage the standoff (Examiner interprets as standoff press) to attach (see Fig. 4) the device to the support base.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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16. Claim 12, 14-18, 20 and 21 are rejected under 35 U.S.C. 102(e) as being unpatentable over Goodwin (US 6,545,879) as claimed above, in view of Alden, III (US 6,786,691).

With respect to Claim 12 (as best understood), Goodwin teaches the electronic system of claims above. Goodwin does not teach the standoff and the spring are hidden in a counter-bore when the screw engages the integrated circuit. Alden, III further teaches wherein the standoff and spring are hidden see (Fig. 5) in a counter-bore when the screw engages the integrated circuit. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the electronic system of Goodwin with that of Alden, III for the purpose of providing a recess to enclose the spring and limit the tension on the integrated circuit when the heat sink is installed.

With respect to Claim 14 and 20 (as best understood), Goodwin teaches the electronic system or the apparatus of the above claims. Goodwin does not teach the press fit. Alden, III teaches wherein the standoff press is press fit (see Fig. 1) to the base of the thermal transfer device. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the electronic system of Goodwin with that of Alden, III for the purpose of providing a press fit to retain the standoff press in position.

With respect to Claim 15, Goodwin further teaches the wherein the standoff press is fitted to the bore from the bottom (see Fig. 1) of the thermal transfer device base.

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With respect to Claim 16, Goodwin further teaches wherein the screw is inserted to the bore from the top (see Fig. 1) of the thermal transfer device base.

With respect to Claim 17 (as best understood), Goodwin does not teach the counter-bore. Alden, III teaches further comprising a counter-bore, wherein the counter-bore (Fig. 5, #380) grasps the spring when the thermal transfer device is attached to a integrated circuit (Fig. 2, #9) for reliable thermal performance. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the electronic system of Goodwin with that of Alden, III for the purpose of providing a recess to enclose the spring and limit the tension on the integrated circuit when the heat sink is installed.

With respect to Claim 18 and 21 (as best understood), Goodwin fails to disclose that the screw is adapted inside the standoff. Alden, III further teaches wherein the bottom threaded portion (see Fig. 1) of the screw is adapted inside the standoff. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the electronic system of Goodwin with that of Alden, III for the purpose of providing a recess to protect the screw threads when the heat sink is removed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ulen et al. (US 2005/0068740) by the same inventors in Para. 0032+ (Figures 7 and 8) teaches the invention claimed in this application. Davidson (US 6,859,367) teaches the following structure: thermal transfer

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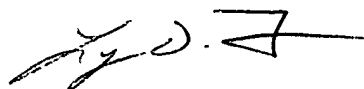
device, a standoff press, a bore in base of the thermal transfer device; a screw and a spring.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert J. Hoffberg whose telephone number is (571) 272-2761. The examiner can normally be reached on 8:30 AM - 4:30 PM Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on (571) 272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RJH



LYNN FEILD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800